

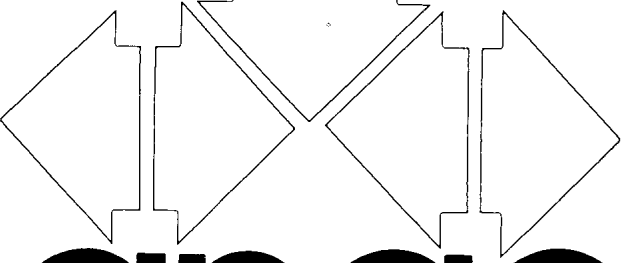
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dda in the 1990's

october 1980

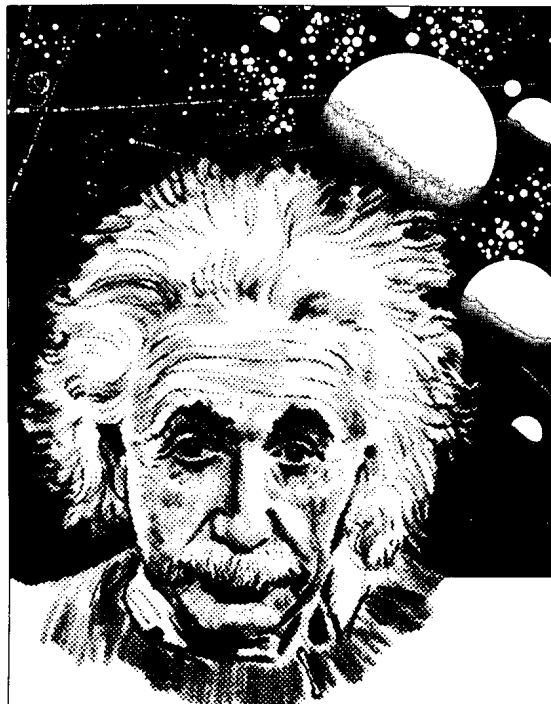
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I hold that man is in the right who is most closely in league with the future.

Henrik Ibsen

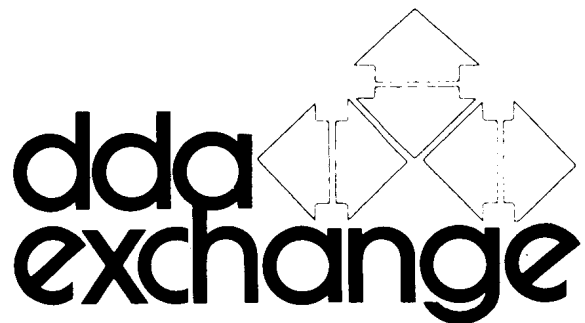
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help!

This is our first try at a theme issue, which we plan to publish about once every year. We would very much like your opinion on the Exchange, the theme idea in general, and the presentation of the "DDA in the 1990s" theme in this issue in particular. (U)

A questionnaire is included as the last page of the magazine. We would appreciate your taking a few moments to complete it. You may reproduce the form, or if you need additional copies, please contact the DDA Management Staff, 7D18 Headquarters, ex-



A quarterly publication for the exchange among DDA personnel of ideas, concepts, information, and techniques that are of common interest.

NATIONAL SECURITY INFORMATION

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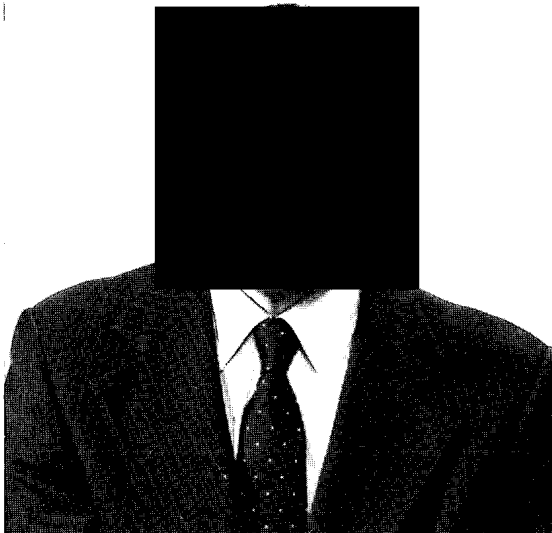
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comment

[REDACTED] was the DDS&T representative to the Information Handling Task Force. His comment on Information Handling in the 1990s follows.

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Advances in electronics, communications, and computer technology are truly breathtaking. Had automobile technology improved at the same rate, a Rolls Royce would cost \$2.50 and get 200,000 miles to the gallon. We are in the midst of an information revolution, which, like the industrial revolution before it, will change the way we do our jobs, the jobs we do, and the organizational context in which we do them. Wistfully, this is one revolution where our Agency will not be in the van. Our needs pale beside the information needs of industry, our resources are Lilliputian beside the dollars to be spent for home computers, video disks, and electronic games. Having thus lost our ability to

[REDACTED]
Chief, Processing Analysis Technology Group, ORD

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steer computer technology, we must be more alert to where it is taking us, as individuals and as an organization. (U)

Electronic "chips," soldiers in the information revolution, double in capacity roughly every two years, and resulting reductions in price, weight, and power consumption of memories and logic elements will make possible many new applications and improvements in present applications. Sensor and communications systems will increasingly output digital information, and the rates of data will increase dramatically. Computers will transform this data glut into useful information. Increased data processing at the sensor location will reduce the complexity of the problem at the central processor. (U)

Silicon Logic and Memory is the workhorse of the large mainframe computers used by the Agency, whose requirements in this area differ not at all from other government and private users of such equipment—i.e., millions of instructions per second (MIPS), storage disks, etc. at lower cost. By the 1990s, general purpose performance will

range from 30 to 100 MIPS. Memory sizes will be two to eight times as large as those of today's largest computers; cost will drop and power consumption will be a few kilowatts. (U)

Micro- and mini-computers promise computing power to the end user. Properly viewed, these are not an alternative to, but rather a part of traditional data processing systems. Where and how the information should be stored are questions as important as where the data should be processed. The questions are not only technical but administrative and sociological. (U)

On-line storage costs have dropped steadily, a factor of 10 in 7 years, and the trend will continue. In conventional magnetic storage, the improvements have come from increased storage density. Price-performance has also responded directly to increased competition and higher sales volumes. Hard disk technology has proved to be the mainstream of on-line storage, with occasional forays into new tape technologies, e.g., rotating-head wide videotape, magnetic spools, etc. Floppy

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disks and tapes most often play the role of tertiary, demountable, personally storable media. (U)

Optical disk technology has so far remained an unfulfilled promise. The technique uses a modulated laser to "burn" on a glass master disk a series of pits following a spiral track like a conventional phonograph record. From this original, a stamping or injection molding master is prepared, and plastic copies reproduced so that the signal-containing pits differentially reflect the "reading" laser beam. Movement of the reading laser can be controlled so that if a machine-readable frame number is included in the video signal and one frame is written per revolution, we have random access and the ability to "freeze" a single frame. Based on a single frame per revolution, the early commercial video disk contained 30 minutes of continuous-play video, or about 55,000 separately readable video frames. (U)

Consumer video disk technology is oriented toward low cost for high volume reproduction, the process is "batched," the

whole disk is written and can neither be erased nor updated. Research is underway to adapt the optical read/write technique to a device more suitable to computer applications: immediately readable, erasable and rewriteable, with a capacity of 2×10^{11} bits. (U)

If video disks penetrate the mass home entertainment market, then the promise of low cost exists insofar as the computer optical store mimics the home device. Whether home entertainment video disks will be read-only, as at present, or will incorporate a recording capability is difficult to predict. There are market forces in each direction: competition with video tape argues for development of a recording capability; however, the read-only disk is most attractive to the purveyors of program material who have been the driving force to date behind the video disk development (e.g., MCA-Universal Studios). (U)

Computer software, in contrast to the steadily improving price/performance picture for hardware, is increasingly expensive.

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In the absence of productivity increases, a predicted scarcity of programmers will accelerate the rising cost of a programmer-hour beyond simple inflation. The dismal picture is worsened yet further by the inevitable movement of software production from the ADP functional specialist to the (generally higher priced) substantive users. This do-it-yourself tendency, fostered by programmer scarcity and abetted by alluringly low-priced, stand-alone hardware, underscores the imperative for improvements in programmer productivity. (U)

Any improvements in programmer productivity will surely come at the expense of "inefficient" use of hardware, e.g., very-high-order interpretive languages, and the inclusion of "off-the-shelf" blocks of code written originally for other purposes and burdened with features inappropriate to the present application. The required large amounts of on-line source will be "wasteful" of storage. (U)

High Order Language (HOL), such as FORTRAN, COBOL, PL/I, JOVIAL, Basic,

APL, PASCAL, etc., can improve user productivity by no more than a factor of two. Therefore, we will turn increasingly to Very High Order Languages (VHOL) which may be thought of as a special purpose HOL. When a task is sufficiently specific, and frequent, a special purpose HOL often emerges. The trend to replace programmers and the like with technology and facilitate hands-on interaction by principals may be fostered by development of Agency-unique VHOLs. At the same time we must be alert to the dangers of pursuing a lonely course. The more we specialize the argot of our interactions with information, the less well we can take advantage of progress in the information handling world outside. Database management systems are an important example of a very high order language to which we have already gravitated. The future developments in database management will be the inclusion of data about the data, including access controls. This development will be of vital benefit to the Agency, supporting our need for compartmentation. (U)

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Among the issues raised for the Agency by the burgeoning technology are the three S's, Security of data; Scarcity of skilled personnel; and, Sociology of organizational change. Each of these is a challenge to which we all respond, as individuals and as an Agency. (U)

Security and control of information will be deeply affected by the new technologies. Analogies have been drawn between keeping information in the computer and keeping it in a conventional safe. The analogies break down, however, because of: the scale of information stored; the large number of people who know the "combination"; the interconnectivity of some computer systems; the fact that access can be gained remotely, thus removing some physical threat to the penetrator; and, perhaps most importantly, the computer can be turned against itself . . . its own facilities can be used to search through the extraneous and extract the meaningful. In addition, many of the products of the computer are machine-readable and not easily inspectable by humans—magnetic tapes and disks, for example. The

danger here is obvious, redoubled by the fact that as storage densities "improve," the mischief which can be caused by a stray piece of magnetic media goes up proportionately. Only now is the Agency facing up to the implications of this increasing threat. On the research front, so-called multi-level secure operating systems have been the perennial focus of attention for a decade or more. Their promise of enforceable compartmentation remains elusive, however. A slightly different attack on the same problem will be encryption of stored data. This will provide a measure of security, compartmentation insofar as facets of a database are "keyed" differently, and quicker destruction and reconstitution as only the keys must be destroyed or re-established. On the brighter side, the indefatigable computer can keep audit trails of who has accessed what information when with an exactitude formerly impossible. (U)

Scarcity of skilled personnel is underscored by a demand which rises each year by over 20%. The severe shortage and in-

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creasing demand combine to render non-competitive the wages of government. The increasing mobility amongst personnel, to which this leads, is especially troublesome to the Agency because of its security clearance overhead. A recent survey showed that for computer and telecommunications professionals: 12% are actively engaged in finding a new job, 17% are inactively seeking a new job, and 51% would consider a new position. Only 20% of the respondents indicated they would not consider a new position. The challenge to management is clear: training to provide the reservoir of expertise, and continually improving morale so as to retain our experts. The bright note is that the organizations challenge is the individual's opportunity. (U)

Sociology suggests that as technologies change, particularly information handling technologies, a former apportionment of tasks may no longer be appropriate. New and improved forms of communications, and radically different task durations often suggest a new breakdown or, more likely, a

consolidation of task segments. Moreover, information handling technologies are capital intensive with a small cadre of skilled individuals displacing a much larger number of less skilled workers. Thus, organizational structure built around formalisms of grade and span of control may no longer be appropriate. (U)

Many of the organizational changes which will suggest themselves as technology changes can be anticipated. When coupled with healthy skepticism and an appreciation of where technology might lead, new organizational options can be explored. Historically, this has been threatening because change is threatening. To retain (or regain) the vitality of the Agency, we must recognize that organizations are arbitrary social constructions to accomplish an overall job under specific conditions. As the conditions change, so must the organization. Understanding the forces underlying the change is the only way to receive the benefits with a minimum of costly disruption. Here, too, the Agency's challenge can be the individual's opportunity. (U)

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To take maximal advantage of the opportunities presented by the technology, there is one thing we all can do. We can become increasingly aware of the information we handle, as distinct from the paper we handle. Consider, for example, administrative memoranda and forms. To communicate administrative information, request information, seek concurrence, or accomplish coordination, we compose a memorandum. As any communication is required over and over, human creativity overlays the few bits of data with poetic variation. The addressee must strip away the semantic disguise to recover the message. Sometimes the process is noisy and the recovery flawed. Additional noise is introduced as the data included by the initiator may not be exactly congruent with the needs of the recipient. Ultimately, a form may be created which structures the communique. Thus, many of our administrative memoranda are basically simple database transactions, which, if the truth be recognized, could proceed directly from keyboard to data base much more efficiently. That is, much of today's word processing is

really data processing gone agley. If ever there was the opportunity to "do more with less," it is here. (U)

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dda in the 1990's

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SECURITY OFFICE OF THE FUTURE (U)

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OS (C)

Communications—gathering information quickly, assessing it accurately, and using it to make correct decisions. Just as investigations are a major foundation block of OS, rapid communications has always been an integral part of the investigative process. It is in this latter area—the flow of information—that we in OS look forward to great changes in the next decade. (U)

allowed our managers to begin shaping our office of the future, focused primarily on the time required for the investigation of prospective staff and contractor employees. Since our mail and clerical process represents a significant but presently unavoidable delay, we attempted to determine if office automation and electronic mail hardware and software could result in a significant shortening of the total investigative time. The initial survey indicates the Delta Date (DD) 7000 series terminal is expected to become the communications workhorse of our future field office and Headquarters network. As envisioned for Agency-wide use, the DD will function as a word processor, a communicating Teletype, and a programmable microcomputer. Within OS, we plan to have terminals assisting in the typing of investigations; electronically speeding the case reports to the Clearance Division; and per-

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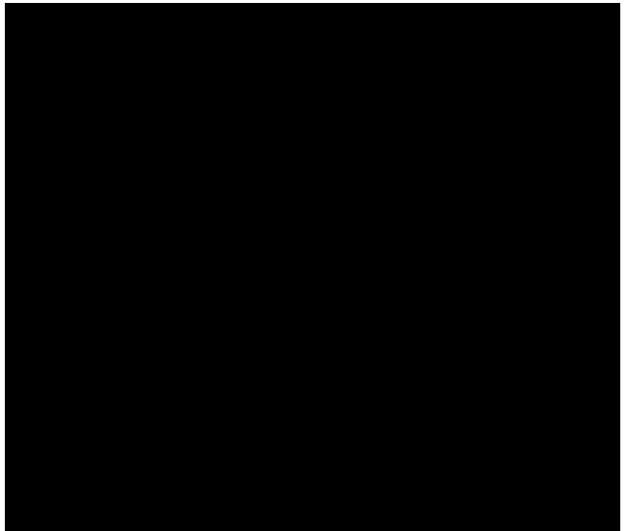
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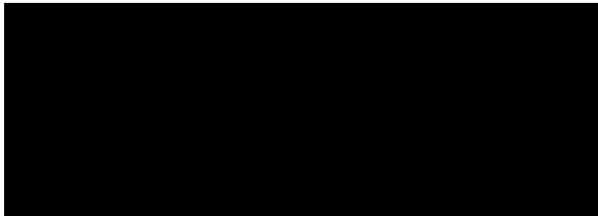
forming routine administrative chores such as manipulating the case control cards. (U)

Coincidentally, the FBI is also putting together a pilot program to automate their field offices. Although the Bureau handles more cases with more agents in many more locations, our approach to common problems is remarkably similar. (U)

Let's dust off our crystal ball and focus it about 10 years down the road. We'll follow the security processing of a staff applicant living in Phoenix, Arizona in 1990. Once her Personal History Statement arrives in Washington, OPPPM will immediately type it onto a computer terminal. They'll then transfer it electronically to interested components, Medical Services, and Security. (U)



The electronic file of the future will have many advantages we don't enjoy today. More information should become available to a greater number of people much faster. But since discovering a person's background, character, and loyalty is very much a people-oriented business, we anticipate that



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machines will be of limited value in gathering information—and of great assistance in forwarding, collating, and evaluating data. (U)

We've just barely cracked open our electronic doorway to the future, and what we have seen already poses challenges as well as exciting opportunities. The skilled and dedicated investigators, the "doorbell ringers," will never be less important or necessary than they are today. The challenge, therefore, is to use our new electronic helpers to our maximum advantage—over the next decade and beyond. With the communications and computer power of the CIA supporting us, this Office has the very real possibility of revolutionizing the security investigative cycle from receipt of the case through the collection of background information to the final adjudication. (U)

OC IN THE 1990s (U)

[REDACTED] OC (C)

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Will OC be a viable, dynamic organization, providing an important service to the Agency in the 1990s? We believe so. OC, like all the other components of the Agency, will undergo change during the next decade. Some of our attributes will grow in importance; others may diminish; and a few may disappear. The changes we anticipate, however, will be toward one end—improving the telecommunications service to the Agency and the Community. (U)

International tensions and a renewed interest in strengthening America's defense posture will produce an impetus for new and expanded intelligence activities and products. OC perceives not only a significant growth in information handling (IH) requirements to meet these demands, but diversification in the application of IH systems for intelligence production purposes. New and innovative ways of using technology for

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collection, analysis, and information manipulation will breed many new support requirements. To OC, these expanded requirements may generically be categorized as: interactive service in support of data terminal-host processor exchanges; transactional service, an exchange with short-term storage requirements, to support new activities such as electronic mail and word processing; traditional record traffic service and bulk data service to provide a transparent exchange capability for file transfer and collection data. To support these services, OC will require a reliable, survivable, error-protected, high-capacity, secure telecommunications network. (U)

We also perceive a changing role for our overseas facilities:

- Base stations will continue their traditional role of HF relays but will grow in importance as new emphasis is placed on the survivability features of the HF transmission medium. This new emphasis is due, in part, to the recognition of the vulnerabilities of satellite systems and the

risk of relying too heavily on one type of carrier system.

- Field stations will serve as a distributed base station and carrier resource in times of stress. They will also assume new roles in the areas of covert communications support and accommodation of field ADP and collection systems.
- Centralized communications centers as we know them today will diminish in number as IH requirements continue to gravitate toward a distributed work station environment. (S)

Technology over the next decade and in the 1990s will play a significant but not a dominant role in the Agency's information handling future. Telecommunications equipment will make increasing use of microprocessor systems. This, in turn, will enable new services to be provided and permit the automation of many manual functions. Electronic component technology will continue to advance and enable us to economically pursue expansion and integration of service fea-

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tures by deploying modular and distributed systems. (U)

OC looks forward to the 1990s with both enthusiasm and regard for the many opportunities and problems ahead. We feel challenged, yet confident, that the 1990s will reveal that the CIA's telecommunications system will be the best in our history. (U)

COMPUTERS IN THE FUTURE (U)

ODP (U)

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The computer is now about 25 years old and some say rapidly approaching infancy. Much has been written about the rapid changes in hardware technology, which have pretty much driven the industry in the past quarter century, and the resultant decreases in costs and the increases in performance. There seem to be nearly unanimous predictions that this trend will continue—with magnetic bubbles used for data storage and Josephson technology for increased logic and memory gains. Both IBM and Amdahl are confidently predicting that by 1990 the power of a 3033 or a V/7 will be available in a desk-side terminal device. Such developments then shift the emphasis to the manpower costs and the man-machine interface problems. Studies already show that the machine cost is the major cost for less than 5 percent of jobs while human costs are about 20 times more expensive for 95 percent of the man-machine interactions. It is this

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man-machine cost interface that will probably be the controlling factor in the growth of computer usage for the coming decade and beyond. (U)

As one looks ahead, ODP is already planning for every Agency employee to have a terminal available at his desk. In large measure this will replace the phone, dictaphone, typewriter, calculator, and copier used today as well as the file cabinet, book cabinet, bookcase, and trusty gray four-drawer safe. The analyst would arrive at his desk and check the cables received overnight and file those he wanted to keep. Then a calendar file would be called up to see what meetings had been scheduled, and a tickler file could be scanned to see how many reports were late and PARs overdue. An analyst could then call a counterpart elsewhere in the Agency to discuss a report, and the col-

The RAMTEK 6412, high resolution color graphics terminal, which is currently in use in some Agency offices. The generation of the Agency seal was a training exercise when the first RAMTEK was purchased. (U)

league could send portions of a pertinent report via the terminal. When the analyst goes to lunch or home at the end of the day, there will be no need to have anyone cover or do a security check—just log off the terminal and leave. (U)

With this scenario in mind, can we confidently look forward to a really paperless Agency within a decade (or two)? The SAFE system will be a forerunner of things to come and a valuable test-bed for emerging ideas and technology. Will it be possible to apply these concepts to the field station as well as the Headquarters area? Project CRAFT will provide a challenge to designers and users alike to overcome technical, logistical, and administrative hurdles for overseas installation. (C)

The concept of the automated office and paperless Agency has been bandied about quite freely and probably has a different meaning to every user. There seems to be little doubt that the hardware will be there before the 1990s (it is, to some degree, available today) for anyone to develop their own

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system at varying degrees of sophistication. The real challenge for ODP and OC will be to have the secure and reliable communications in place to exploit the advancing technology. For ODP, the challenge will be to have usable software which can be adopted to a variety of users. The attendant security and records management questions should also not be minimized. (U)

In summary, it would be well to highlight the increasing people costs for the paperless office which will continue to increase as the price per hardware operation continues to decrease. Unless actions are taken to reduce the human costs and simplify the man-computer interface, the full advantage cannot be made of the exotic technology. Thus the emphasis will shift from hardware to software and eventually to operating procedures as human time becomes the most expensive commodity. As more and more data become available on line, the demand for hardware and software problems. Truly, many opportunities and challenges are ahead. ODP is looking forward to meeting them. (U)

FINANCE IN THE 1990s

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Nine years of the decade of the 1980s remain before us. Any substantive discussion of financial accounting or management information systems would be incomplete without looking at the realities to be faced throughout the 1980s which are affecting and will continue to affect the evolution and creation of such future systems. (U)

The growth in the size and complexity of the functions and activities of our government over the past few decades has made necessary an extensive search for ways to better monitor the results of government programs. As the nation moves forward into the 1980s, there is an ever expanding awareness on the part of policymakers and administrators that our country is becoming more and more of a "have not" nation. In the same way as we are faced with a shortage of raw materials with which to sustain our industrial economy, the individual programs of all gov-

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ernment agencies will be more tightly constrained by the finite resources of available funding. It is all too apparent that many of the current issues which we perceive today as being critical ones, could, and should have been addressed and planned for years ago. It is generally recognized that the government had not had a good focus for dealing with long-range policy issues. Perhaps more than at any other time in our history, the government appears to be in a kind of reactive, trying-to-catch-up posture. For too long, managers have been willing to deal only with problems existing at the moment with an apparent problem in coping with those, much less take on problems that might occur in the future. (U)

A large part of the government's failure in long-range planning has been a question of information, or, more particularly, the lack of the right kind of information. Too many financial accounting systems have been designed only to perform those tasks which are classic accounting functions. Too little thought has been given to how that system

serves the informational needs of each level of manager in the government by the summarization of information so that each manager is not burdened with extraneous information. In short, if any system cannot enable the manager to compare the results of that system to the previous system or way of doing the job, in terms of increased effectiveness and attainment of program goals, that system is a failure. Throughout the government, administrative costs of operation have soared to unprecedented heights and heavily diminished the funds required for the prime mission of all agencies. The cost of operating the US government is staggering. It is government's responsibility to offset this cost by more effective methods of production for all categories of federal employment which will both reduce direct overhead costs and enable top management to engage in definitive long-range planning for the future. (U)

A fairly strong institutional base for the program accountability has always existed within the government. This is a traditional American value which the American taxpayer

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expects as an integral part of the government. Particularly during the last 50 years, attempts were made to improve the reporting, analysis, and oversight processes relating to all functions of the government. Many improvements were made and became accomplished fact but only at the cost of adding new functions which impinged upon the scarce resources of money and manpower. In looking into the future, this approach cannot be the answer to government's problems. What is needed is a method to strengthen the processes now in place without the addition of new processes and institutions. The tools are within the manager's grasp to do this very thing. Those tools are electronic systems technology and the imagination of the individual manager. (U)

The government has tended to become very stereotyped in its accounting procedures. Basically, little has changed in the basic concepts of financial accountability since the Civil War. Accounting for funds advanced remains essentially the same except

that we now use computer systems for recording and summarizing figures. New thinking on the subject is required. Happily, the Office of Management and Budget (OMB) is seriously examining current policies and approaches used to reimburse a great number of official costs. With travel costs, for instance, OMB is attempting to identify those procedural and administrative areas which have the greatest potential to influence agency travel behavior and, consequently, travel costs. The long-range impact of this study will have a dramatic effect on the administration of all official travel. By the 1990s, voucherless travel reimbursement will be a reality. All travel will be reimbursed on a commuted rate formula. One agency within the government will have the responsibility for setting these rates and issuing travel regulations. This will apply to both foreign and domestic travel. Computer systems will constantly update travel cost information and update the reimbursement factors involved. The auditing and accounting of official travel vouchers as we know it will simply disappear. The actual expense concept

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for reimbursement of official costs has become so expensive to administer that the government is spending more money on its continued application than the controls are worth. A survey performed by the General Accounting Office a few years ago showed that the average agency was spending some fifty dollars per travel voucher for audit and reimbursement purposes. The average discrepancy on these same vouchers was found to be less than fifteen dollars. At long last, the government is freeing itself of this type of administration. (U)

Consider for a moment the impact of having one agency write all federal travel regulations. No longer will individual agency staffs be required for setting policy and preparing in-house regulatory issuances. Agencies will not be permitted to place limitations on federal travel policies. All agencies will be following the same regulations and the policy interpretations applying to them. One can only attempt to imagine the amount of decrease in the number of Comptroller General Decisions relating to travel problems which

are needlessly created by differing agency regulations. (U)

In the field of computer technology, the future is full of astounding possibilities. Undoubtedly, the 1990s will see OF paying vendor bills by means of an officer speaking to a computer, telling it to pay such and such a company a certain amount of money for line items whatever and transfer the payment by electronic funds transmission to the company's bank account. The computer, responding in slavish fashion almost immediately, will accomplish all the above. The computer will be programmed to respond to only authorized voice patterns and ignore all others. Orally instructed computers will not require specialized training to use since there will be a natural interface with the computer. The systems will respond with great ease to managerial inquiries. Learning to understand language—how it is structured and the knowledge it contains—is the key to computers being able to understand and store the knowledge of the world. Once programmed, oral computers will be able to

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learn indefinitely. As put by Eldo Koenig, computer scientist at the University of Wisconsin, "The computer could establish conclusions to arguments and perhaps most importantly, define what knowledge does not exist." (U)

Tomorrow's computers will be limited only by the brain power of the user. Tomorrow's financial world will be like nothing we have ever seen or dreamed of. (U)

THE OFFICE OF THE FUTURE (U)

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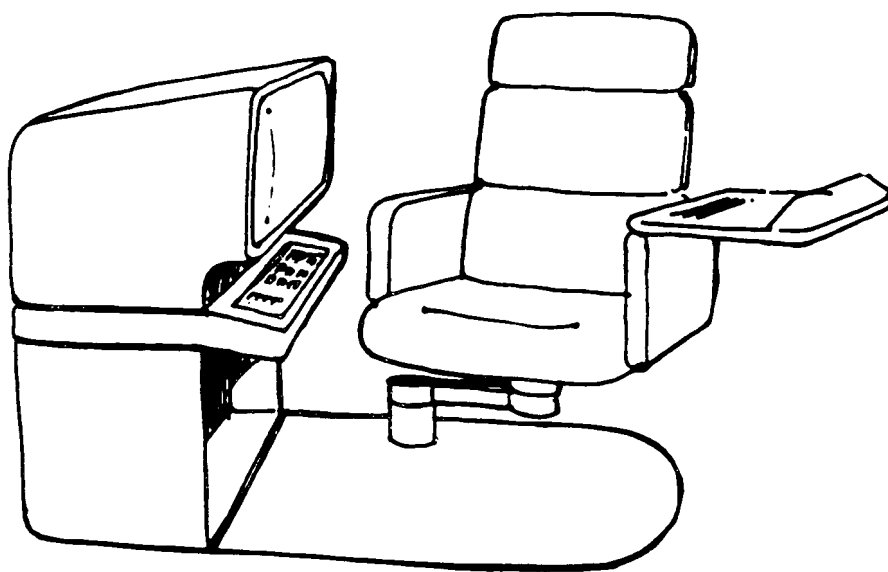
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During the past decade, the American production system has realized the least increase in productivity and efficiency in its greatest sector, the office. Now, increasingly specialized word processing, electronic mail, micrographics, and fiberoptical equipment are being introduced in conjunction with telecommunication and computer networks in hopes of improving employee output. Ten years from now, it is expected that there will be a terminal for every second work station. (U)

The Agency which processes, communicates, and stores information will want to adopt procedures which most effectively utilize people, space, and energy. This will bring about environmental improvements and changes in working conditions and will necessitate a rethinking on the part of space planners, interior designers, procurement officers, and government regulators. (U)

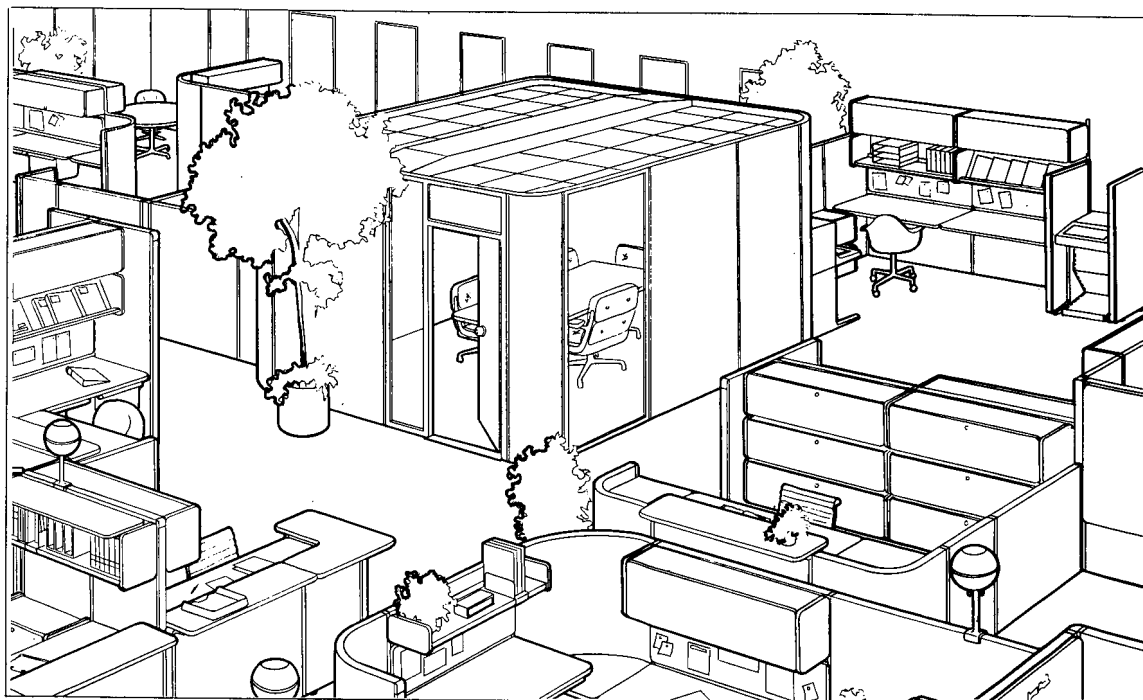
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The Office 20 Years From Now



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Most likely, the office will take on an industrial look. Indeed, some "furniture" will be converted to "equipment." Terminals, which now sit on expensive desks or tables, will come with stands of the proper dimensions. Some stations may resemble a "cockpit" filled with a multitude of electronic options. Technology will change so rapidly that it will be impractical to have many offices with fixed walls and separate heating, ventilation, and air conditioning systems. Energy efficient task and ambient lights attached to work areas will replace traditional ceiling fixtures. Greater flexibility and better control for glare-free CRT viewing will result. Enormous quantities of cables will require access flooring or ceiling-based wiring systems. (U)

This trend toward industrialization will require designer/architects to consider human

"Systems furniture" will provide flexibility and sound control. Note modular private offices.

morale, motivation, and behavioral needs. Ergonomics, the science of adopting working conditions to suit the task and the worker, will have to receive greater recognition. Structural design will progress from the inside out, beginning with a study of the work environment, people and function, and then proceeding to the building facade. Employee participation will need to be incorporated into the planning and design decision process. (U)

Furniture will be flexible to suit individual differences. Work surface and chair height will be easily adjustable. Greater attention will be given to lower back support, and individual control will be possible from a sitting position. Executive officers will enjoy the new technology in conventional furniture. However, the credenza will probably be replaced by a computer terminal so that management can tap the data store for current reports and information. (U)

The flexible, open layouts will require greater attention to providing an interesting, comfortable, sound background free of

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distracting noise. Furniture and wall surfaces will be rounded and padded in order to soak up and divert sound. Files made more efficient by computer assisted referencing will still be essential for storing hard copy, but they, too, will be wrapped with sound-soak materials. Architects doing layouts on computers will be able to preplan sound control as well as develop optimal space layouts. Work stations will be so flexible that offices can grow, contract, or be rearranged overnight, reducing renovation costs by 80 percent. (U)

With salaries increasing and automated equipment prices decreasing, it is imperative that future office design considers the comfort, release of creativity, and effective integration of people working together. A greater recognition of human requirements should enhance productivity and the success of the CIA. (U)

"LIMS"

A System Responsive to Support Requirements of the Agency in the 1980s and 1990s (U)

 OL (U)

25X1A

Under the administration of the D/L, OL is responsible for the development of Logistics policy and planning; establishment and maintenance of a procurement and supply system; administration of real estate and construction programs; and for printing, photography, mail, courier, transportation and other appropriate logistics capabilities and services, in support of the worldwide missions and functions of the Agency. (U)

Logistics management philosophy has been one of providing logistical support that is totally responsive to tasking requirements. The translation of this philosophy, within an environment of mandated reductions in budget and personnel resources, creates a significant challenge. New and better meth-

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ods of meeting requirements must be found to survive as a responsive and professional support organization. One method now underway in the form of analysis, evaluation, and planning is to develop a *Logistics Integrated Management System*, more popularly known by its acronym as "LIMS." A brief definition of the totality of this project is to be found in the officially accepted LIMS Goal:

To develop an integrated management system that recognizes and reacts to service requirements and resource constraints, and enhances operational efficiency, effectiveness, and productivity. To progressively increase automation in OL information handling systems through an expandable, flexible, Agency/Office-wide automated management information system which supports worldwide OL operations. The system will transfer OL labor-intensive operations to computers and integrate all Logistics processes in the area of procurement and property management including requisitioning, contracting,

distribution, receiving, and inventory. The system will also interface with Agency accounting, budget, and payment process. (U)

While LIMS development has become the responsibility of specific individuals, the definition and clarification of issues, goals, objectives, requirements, and current problems identification calls upon expertise from throughout OL—and other Agency components as needed. In terms of formal structure, LIMS is managed by an OL Steering Committee composed of 11 senior managers representing OL, OIG, ODP, and OF. In addition, a LIMS Task Force composed of five representatives from ODP, OF, and OL are engaged in current systems analysis and new system development on a full-time basis. The Plans and Programs Staff, OL, complements Task Force activities with an additional full-time minimum of two personnel. LIMS represents a major objective within OL's Strategic Plan. To quote from the Plan:

The challenge which Logistics will face during the next five years will be to off-

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set the effects of scarce resources through increased productivity . . . and . . . maximize the efficient utilization of existing resources through innovation, creative management, and increased utilization of improved technology. . . . (U)

The LIMS project direction is to modernize many obsolete work functions and place OL in a support posture required to service Agency needs in the 1980s and 1990s. (U)

PROJECT MAVIN—OVERSEAS MEDICAL CARE IN THE FUTURE (U)

[REDACTED] M.D., OMS (U)

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Medical care overseas, especially in developing countries, is not always up to US standards. Within the United States and in one or two other countries, successful radio networks have been developed to consult and advise patients who live in remote areas. (U)

Project MAVIN (Medical Audio Video Information Network) was conceived as a means of meeting the continuing and crucial need for our overseas employees, dependents, agents, assets, and defectors to have quality medical care readily available. A means of direct audio video communication between patient and physician or physician to physician can help to provide the necessary expertise, access, diagnosis, and care required to fulfill our overseas mission. (U)

At present, MAVIN is in its early conceptual stages. When completed, we envision an

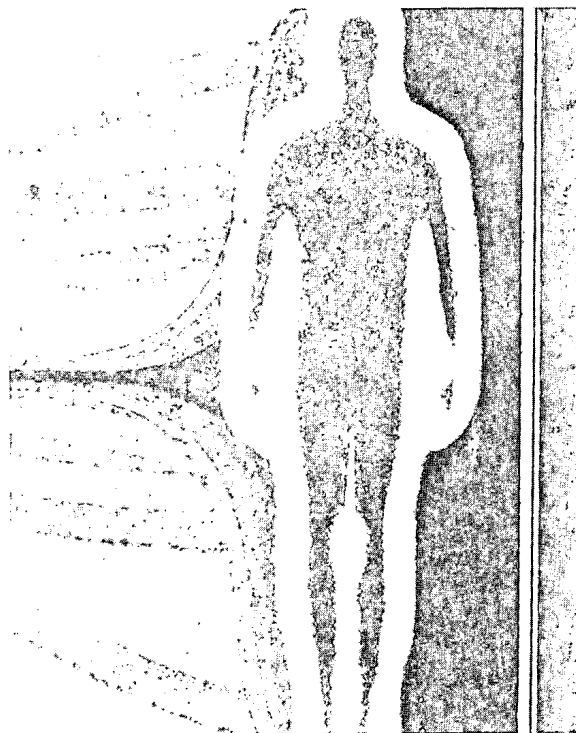
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overseas person will be able to turn on a television receiver/camera and be able to communicate with a medical consultant at Headquarters. A remote evaluation and examination can then be conducted and further tests or treatment prescribed. (U)

Pilot projects using radio only as well as television have been carried out extensively by the Lister Hill National Center for Biomedical Communications (National Library of Medicine), several medical schools in this country, and abroad. It has proven to be successful, well received by patients, and lifesaving for some. (U)

Due to the nature of our mission, implementation of this program will involve coordination with many Headquarters components. Security and medical privacy problems must be addressed. (U)

Medical research and development in the United States have been occurring at a relatively rapid rate. In medical circles, 5 years is considered "the future"; we envision implementation of MAVIN by 1986. (U)



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information

CABLE PROCESSING WITHIN DND—
WHAT'S INVOLVED? (U)

OC (C)

Have you ever wondered how that cable you are drafting or typing gets to the field? What really transpires after that cable gets into the pneumatic tube or is dropped through the window in the Cable Secretariat mail room? What about that flow of incoming messages? By what means did they arrive? (U)

The Domestic Networks Division (DND) of OC is composed of many branches. Two of these, the Signal Center Branch (SCB) and the Cable Secretariat Branch (CSB), possess an equally important responsibility in the preparation, processing and transmission of outgoing and incoming cables. We'll begin our journey in CSB and follow an outgoing cable through each step of the process. (U)

Cable Secretariat, specifically the Cable Duty Office, is the terminating office for ca-

bles placed in the pneumatic tube system or delivered to the CSB mail room. The Cable Duty Officer reviews all outgoing cables for a valid releasing authority and signature. Additionally, he scans the message for obvious procedural errors that will prevent the message from entering the automated communications system. If a problem exists at this point, a phone call to the originating office will generally provide the information necessary to correct the cable and forward it to the next step in the outgoing process. (U)

Once the cable passes the initial screening process, it is forwarded by tube to the Automated Communications Terminal (ACT), one of the four components of the Signal Center Branch. Your cable must now be manually prepared to enter the Optical Character Reader (OCR) for onward processing and transmission. All pen and ink corrections, additions, and deletions must be found, correctly identified, and noted. The OCR will NOT accept any nontypewritten data. Therefore, a function must be added prior to the entry of your message into the system that

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instructs the OCR to stop and allow the operator to manually type the revised line into the computer. Any handwritten change, regardless of length, requires that the entire line be retyped by the OCR operator. Not limited to pen and ink corrections, some common typing errors include the failure to adhere to prescribed left- and right-hand margins, and the lack of proper paging information on the standard cable form. Approximately 1,000 outgoing cables are processed each day—one in two contains at least one error. This time-consuming function causes your cable and all others following it to be delayed until the proper corrections are made by the OCR operator. (S)

Your message has now cleared the OCR and continues its onward journey electrically to the Cable Dissemination System (CDS) computer. CDS issues the Date-Time-Group and the Message Reference Number. Before performing these functions, CDS must first recognize valid and correctly spelled "TO," "MHI/CITE," and "CLASSIFICATION" lines, the first three lines of the message form. CDS must have letter-perfect instructions to

format your cable correctly. If errors do exist, CDS will not proceed with the processing, but return your cable to a Visual Display Unit (VDU) for correction. Other than incorrect spelling, some additional errors that require editing include:

- Deferred Telepouch with Director vice Washington;
- Staff used with Washington vice Director; and
- Failure to include a period following the last addressee in the "TO" line, to mention a few. (S)

We now have a legitimate cable that is formatted correctly and ready for transmission. CDS passes your finished product to the ACT computer for communications preparation. ACT assigns the external communications header that directs the cable, through the use of specific routing indicators, to its final destination. A separate routing indicator is assigned to every communications facility throughout the world. ACT also issues a separate check

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number to each addressee on your cable for accountability. Your cable is now released for transmission and, simultaneously, a copy is sent to CDS for dissemination and storage. Through the use of modern computer technology, the time frame for a one-page message to pass from the OCR to final transmission by ACT is under one minute. (S)

Your cable leaves ACT/CDS and moves to another component of the Signal Center Branch, the Message Automated Exchange (MAX). MAX is one of a number of major relay facilities maintained in strategic areas of the world by OC. MAX recognizes ACT as one of [REDACTED] stations with which it interfaces on a daily basis. MAX receives your cable from ACT and immediately assigns an incoming MAX number. It then determines how many times it must transmit your cable and to whom. Suppose you have three ad-

[REDACTED] 25X1A
Center component, the Special Activities Facility (SAF), for off-line crypto preparation. An output log is prepared for each transmission by MAX, and the data is written to a computer disk for future reference. Briefly, MAX recognizes all routing indicators, segregates cables by area, transmits them accordingly, and files a copy to computer disk for short-term storage. (S)

During the preparation and relay processes, your cable remained in plain language. To adequately safeguard this information during transmission, it is necessary to provide cryptographic protection. The fourth component of the Signal Center Branch, the Technical Control Facility (TCF), accomplishes this task and more. (S)

TCF is the keystone of SCB's operation. 25X1A
All communications lines in and out of SCB are controlled and maintained by TCF. Their realm of responsibility includes [REDACTED] data channels, including secure communications

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[REDACTED]
[REDACTED] is responsible for all cryptographic security for these lines. Cryptographic keying is changed regularly on all secure communications circuits in TCF, including lines for the secure telephone systems. (S)

[REDACTED]
[REDACTED] is one of a number of stations that does not have the advantage of an on-line cryptographic system. Therefore, alternate means must be made available to protect classified cables sent via unclassified

or non-Agency channels. SAF is responsible for all off-line crypto preparation. Following this special cryptographic preparation, your message is now scrambled and can be transmitted to [REDACTED] via secure or unclassified means. (S)

The procedures outlined for outgoing cables are basically reversed to accommodate incoming cables. MAX receives your answer from the field and sends the message to CDS. Incoming errors must be corrected to facilitate the dissemination process. CDS assigns a number to each incoming cable received, then sends it to the Cable Secretariat Branch (CSB) for screening, dissemination, and reproduction. CSB processes approximately 6,500 incoming cables per day. Each incoming cable enters CSB where your outgoing cable journey began, with the Cable Duty Officer. The Signal Center Branch has done its job and the CSB must now direct the final dissemination, reproduction, and delivery of the field's reply to you. (S)

The Domestic Networks Division, the largest division in OC, provides a valuable serv-

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ice to domestic and overseas customers alike, combining the efforts of these two Branches to achieve a common goal—secure, accurate, and timely record communications. (S)

WE THANK YOU! (U)

25X1A [REDACTED] OC (C)
[REDACTED] OC (C)

Regarding the foregoing article and the reference to handwritten corrections on Headquarters-originated messages, a significant accomplishment was recently achieved. First though, a little background. (U)

In July 1978, in a survey of Headquarters-originated messages, both cables and telepouches, 70% of those surveyed had handwritten corrections either in the text or in the originating/releasing area. As a result, significant delays to originating traffic were occurring. Remember that the Headquarters

Signal Center Optical Character Reader (OCR) cannot read handwritten corrections, and each time one appears, an operator must manually intervene to make the necessary corrections. While the OCR can scan and process a typewritten message page in approximately 15 seconds, the handwritten corrections were negating this speed of service. On one occasion, it took 7 hours to process a multipage IMMEDIATE cable that could have been processed by the OCR in 30 minutes had it been prepared properly. (U)

With a continuing increase in Headquarters-originated traffic and corresponding reduction in OC positions and personnel, there was considerable concern that service to our customers would be degraded if we could not eliminate or significantly reduce these corrections. (Of interest, neither the [REDACTED] will accept any messages with handwritten corrections!) As a result, cable briefings were arranged for secretaries and other personnel from all directorates; Domestic Networks Division personnel attended OT&E training

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courses for EOD secretaries and typists to instruct them on cable preparation; and each directorate was provided with quarterly statistics on the number of cables originated by their respective elements containing handwritten corrections. (U)

Although there was a reduction during 1979, there were still too many corrections. A proposal was then put forth to limit the information/names in the originating/releasing area of messages. After considerable effort, the proposal was adopted, and on 05 August 1980, HN [REDACTED] containing the changes, was published. (U)

Now for the significant achievement. In a survey conducted on 27-29 August 1980, only 13.6 percent of the messages surveyed had handwritten corrections! Processing time in the Signal Center has been reduced significantly, and backlogs are almost nonexistent. For all of your efforts, we thank you! Now, can we do even better? We think so. Based on your accomplishment to date, zero corrections should be a realistic goal. Try it—we think you'll like it. (U)

UPDATE ON FEDERAL WOMEN'S PROGRAM (U)

[REDACTED] (U)
DDA Federal Women's Program Officer

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The overall goal of the Federal Women's Program (FWP) is to have women represented in all parts of the Agency, vertically throughout all grades and horizontally throughout all components, job categories, and professions, including top management. (U)

On 18 September 1979, the DDCI approved a new charter stating the purpose, goals, and structure of the CIA FWP. As a result of the Charter, FWP officers became official entities, and new Program ideas are being conceived. (U)

Many of you may have ideas and opinions on what FWP is and what is being done for women. Many things have been accomplished during the past fiscal year that are attributable to the rising interest in the advancement of women:

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- Greater percentages of women in professional ranks were promoted with less time in grade than has been the tradition. Component managers and promotion panelists are responsible for this accomplishment, and I'm told that meritorious performance standards continue to prevail.
- ODP, OF, OL, and OS, which have senior-most representatives to the Working Group, sponsored attendance for their representatives to the Federally Employed Women 11th National Training Program. The purpose for attendance was for personal development and exploration of resources available for use in workshops and seminars for Directorate women.
- We still have an active Working Group (component representatives), which is

 DDA Federal Women's Program Officer

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planning to sponsor a variety of workshops and seminars on topics of interest to women and men in the Directorate. They intend to establish better lines of communication between themselves and those they represent.

- As FWP officer, I will chair our Working Group activities and will work with management in their effort to ensure that women receive equal opportunities for development and advancement. (U)

Some of the Agency-wide policies and issues that have positive impacts on women in particular are:

- CIA Taskforce on Sex Discrimination—Final Report, 7 January 1980. The Report stated that though our “regulations and policies were not discriminatory, . . . the application of policies is discriminatory in subtle and overt ways.”
- HN [REDACTED]—Agency Policy Regarding Staff Employees Accompanying Spouses to Other Geographic Areas. This notice is

a start in maintaining career service status and grade when returning with a spouse from overseas. Women, in greater numbers, once had to restart their careers often at lower grades.

- Career opportunities for Senior Secretaries are now being explored. This is a milestone for those aspiring to that level and a start in examining career development for clerical personnel. (U)

In summation, many more considerations are being taken in the interest of career advancement for women. Much that I've mentioned may seem a hodgepodge of events loosely related to a “Federal Women's Program.” Nevertheless, they directly reflect the “Program.” During Fiscal Year 1981, our DDA Program concerns, goals, and products will address women's attitudes, men's attitudes, and specific areas for change or continuance. You will see the outcome of a number of continuing efforts on behalf of women by your Federal Women's Program. Inquiries are welcome—my extension is [REDACTED] (U)

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current events

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Office of Finance

After several months of soul searching, the Offices of Finance and Data Processing have redirected their efforts from the development of a field financial system for the exclusive support of the [REDACTED] so-called large DO stations and are now intent upon the development of an automated field financial system which will respond to the needs of all DO field installations. The system is to be developed in part to provide relief to a portion of the DO's field paper-holding issue and to capitalize on the DO's eventual field emplacement of "computer technologies." We hope to report further on this effort in a future *Exchange* article. (U)

Office of Logistics

Construction of the new [REDACTED] is proceeding generally on schedule. This new building, located [REDACTED] will house OD&E and OSO/DDS&T. Occupancy is planned for mid-

summer 1981 and will go a long way toward alleviating our chronic shortage of space.

Office of Training and Education

OTE will conduct its first running of the 16-week Senior Officer Development Course (SODC) on 20 October 1980. This course will provide selected GS-14s and -15s with a comprehensive understanding of the intelligence profession's evolving mission, responsibility, and role in the policymaking process. (U)

The Language School in OTE has received its largest enrollment ever in the part-time language program. The 10 languages (German, French, Spanish, Russian, Italian, Turkish, Chinese, Romanian, Hungarian, and Arabic) have an enrollment of 375 students. (U)

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note

I suppose that by now you've noticed that our projections for the DDA's future certainly involve changing technology and its impact. It's difficult to talk technology without a few buzzwords. We tried to keep them to a minimum where we could.

The important thing is that the next 10-15 years are certainly going to involve change for the entire Agency. We can be the agents of that change as easily as we can be the victims of it.

"To the being fully alive the future is not ominous, but a promise; it surrounds the present like a halo."

John Dewey



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SEE
DDA EXCHANGE READER
SURVEY ON FOLLOWING PAGE.

DDA EXCHANGE READER SURVEY

Each reader of this issue is requested to take a few minutes to answer the following questions. Your responses will help the Editors evaluate the acceptance and usefulness of Exchange. Please fold the completed survey form and staple it so the address on the

reverse side shows, then forward it through internal mail. Survey responses should be mailed by 30 November 1980. Results of the survey will be included in a future issue of Exchange.

Please circle the letter corresponding to the most appropriate answer.

1. How much of Exchange do you normally read?
a) All articles b) Most articles c) An article or two d) Usually don't read it
2. To what degree has Exchange increased your understanding of the Directorate?
a) Very high b) High c) Moderate d) Low
3. How do you rate Exchange as a source of information?
a) Excellent b) Good c) Poor d) Very poor
4. What is your opinion of the general quality of Exchange? (writing style, readability, conveyance of message)
a) Very high b) High c) Low d) Very low
5. What is your opinion of the theme approach versus the standard Exchange format?
a) prefer theme b) prefer standard format c) prefer a mixture d) no opinion
6. What is your opinion of this particular theme publication, DDA in the 1990s?
a) strongly like b) like c) dislike d) strongly dislike e) no opinion
7. What topics or subject areas do you suggest for future publication?

8. What subject areas do you suggest for future theme publications?

9. Please add any comment or suggestion pertaining to the publication of Exchange.

10. Please check one item in each of the following categories:


Your grade: GS-14 or above _____
GS-10 thru 13 _____
GS-9 or below _____

Office of Assignment:

___ OIS	___ OC
___ OS	___ ODP
___ OTE	___ OF
___ O/DDA	___ OL
___ Other	___ OMS

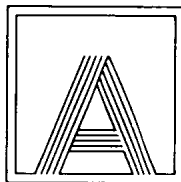
(PLEASE FORWARD COMPLETED
RESPONSES BEFORE
30 NOVEMBER 1980)

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Directorate of Administration

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